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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/576,754	05/07/2007	Aurelian Dodoc	Q94478	6035

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EXAMINER	
COLLINS, DARRYL J	

ART UNIT	PAPER NUMBER
2873	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/576,754	DODOC ET AL.	
	Examiner	Art Unit	
	DARRYL J. COLLINS	2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *51-100* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *51,52,54,56,57,59,60,63,64,75-79,87,90-93,95 and 98-100* is/are rejected.

7)☒ Claim(s) *53,55,58,61,62,65-74,80-86,88,89,94,96 and 97* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 April 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *04212006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement (IDS) submitted on April 21, 2006 has been considered by the examiner.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 54 recites the limitation "the lens pair" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claim 60 recites the limitation "the term h^4" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 51, 52, 56, 57, 59, 63, 64, 75-79, 87, 90-93, 95 and 98-100 rejected under 35 U.S.C. 102(b) as being anticipated by Omura (U.S. Patent Publication 2003/0206282).

Omura teaches a refractive projection objective for imaging a pattern comprising a first lens group having a negative refractive power, a second lens group having a positive refractive power, a third lens group having negative refractive power, a fourth lens group having positive refractive power and a fifth lens group having positive refractive power (page 7, paragraph [0095]), wherein the fourth lens group has an entrance surface that lies in the vicinity of a point of inflection of a marginal ray height between the third lens group and the fourth lens group (Figure 1), and having no negative lenses arranged between the entrance surface and the system diaphragm (page 10, paragraph [0127]) as claimed in independent claim 51.

With regard to claim 52, Omura teaches all of the claimed limitations of the instant invention as outlined above with respect to claim 51, and further teaches such a projection objective wherein only positive lenses are arranged between the entrance surface and the system diaphragm (page 10, paragraph [0127]).

With regard to claim 56, Omura again teaches all of the claimed limitations of the instant invention as outlined above with respect to claim 51, and further teaches such a projection objective wherein the first lens group includes at least one aspheric surface (page 11, Table 1).

With regard to claim 57, still again, Omura teaches all of the claimed limitations of the instant invention as outlined above with respect to claim 51, and further teaches such a projection objective wherein the first lens group includes at least two lenses having one aspheric surface (page 11, Table 1).

With regard to claim 59, Omura teaches all of the claimed limitations of the instant invention as outlined above with respect to claim 51, and further teaches such a projection

objective wherein not more than three aspheric surfaces having one or more points of inflection are arranged in the first lens region (Figure 1 and page 11, Table 1).

With regard to claim 63, Omura again teaches all of the claimed limitations of the instant invention as outlined above with respect to claim 51, and further teaches such a projection objective having at least one aspheric surface in the third lens group (page 11, Table 1).

With regard to claim 64, Omura teaches all of the claimed limitations of the instant invention as outlined above with respect to claim 51, and further teaches such a projection objective having at least one aspheric surface in each lens group (page 11, Table 1).

With regard to claim 75, once again Omura teaches all of the claimed limitations of the instant invention as outlined above with respect to claim 51, and further teaches such a projection objective wherein all the lenses consist of the same material (page 11, Table 1).

With regard to claim 76, Omura teaches all of the claimed limitations of the instant invention as outlined above with respect to claim 51, and further teaches such a projection objective wherein a predominant number of lenses consists of a synthetic quartz glass and at least two of the lens elements arranged in the vicinity of the image plane consists of a flouride crystal (page 11, Table 1).

With regard to claim 77, Omura teaches all of the claimed limitations of the instant invention as outlined above with respect to claim 51, and further teaches such a projection objective wherein a predominant number of lenses consists of a synthetic quartz glass and at least one positive lens made from a flouride crystal in the second lens group (page 11, Table 1 and element L22).

With regard to claim 78, once again Omura teaches all of the claimed limitations of the instant invention as outlined above with respect to claim 51, and further teaches such a projection objective wherein a predominant number of lenses consists of a synthetic quartz glass and at least one positive lens made from a flouride crystal in the fourth lens group (page 11, Table 1 and element L41).

With regard to claim 79, Omura teaches all of the claimed limitations of the instant invention as outlined above with respect to claim 51, and further teaches such a projection objective wherein a predominant number of lenses consists of a synthetic quartz glass and at least one negative lens made from a flouride crystal in the third lens group (page 11, Table 1 and element L31).

With regard to claim 87, Omura teaches all of the claimed limitations of the instant invention as outlined above with respect to claim 51, and further teaches such a projection objective wherein the second lens group has at least four consecutive lenses of positive refractive power (page 10, paragraph [0133]).

With regard to claim 90, Omura teaches all of the claimed limitations of the instant invention as outlined above with respect to claim 51, and further teaches such a projection objective wherein the third lens group has only lenses of negative refractive power (page 10, paragraph [0134]).

With regard to claim 91, Omura teaches all of the claimed limitations of the instant invention as outlined above with respect to claim 51, and further teaches such a projection objective wherein in an object side entrance region, the fourth lens group has at least one meniscus lens having a concave surface relative to the object plane (Figure 1, element L41).

With regard to claim 92, Omura teaches all of the claimed limitations of the instant invention as outlined above with respect to claim 51, and further teaches such a projection objective wherein the fifth lens group has at least positive one meniscus lens having a concave surface toward the image side.

With regard to claim 93, Omura teaches all of the claimed limitations of the instant invention as outlined above with respect to claim 51, and further teaches such a projection objective wherein the fifth lens group has as a last optical element, a planoconvex lens that has a spherical curved entrance surface and a substantially flat exit surface (page 11, Table 1 and page 10, paragraph [0128]).

With regard to claim 95, Omura teaches all of the claimed limitations of the instant invention as outlined above with respect to claim 51, and further teaches such a projection objective being a one waist system having a belly near the object, a belly near the image and one waist lying therebetween (Figure 1).

With regard to claim 98, Omura teaches all of the claimed limitations of the instant invention as outlined above with respect to claim 51, and further teaches such a projection objective wherein the image plane follows directly after the fifth lens group such that apart from the first to the fifth lens group, the projection objective has not further lens or lens group (Figure 1).

With regard to claims 99 and 100, Omura teaches all of the claimed limitations of the instant invention as outlined above with respect to claim 51, and further teaches such a projection objective used for microlithography and for the production of semiconductor components (page 1, paragraphs [0001] – [0008]).

Allowable Subject Matter

Claims 53, 55, 58, 61, 62, 65-74, 80-86, 88, 89, 94, 96 and 97 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 54 and 60 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art taken either singularly or in combination fails to anticipate or fairly suggest the limitations of the independent claims, in such a manner that a rejection under 35 U.S.C. §102 or §103 would be proper. Although the prior art teaches a refractive projection objective for imaging a pattern comprising a first lens group having a negative refractive power, a second lens group having a positive refractive power, a third lens group having negative refractive power, a fourth lens group having positive refractive power and a fifth lens group having positive refractive power, wherein the fourth lens group has an entrance surface that lies in the vicinity of a point of inflection of a marginal ray height between the third lens group and the fourth lens group, and having no negative lenses arranged between the entrance surface and the system diaphragm, the prior art fails to further teach such a projection objective meeting the structural and conditional requirements as claimed in the instant invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DARRYL J. COLLINS whose telephone number is (571)272-2325. The examiner can normally be reached on 6:30 - 5:00 Monday - Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Mack can be reached on 571-272-2333. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Darryl J. Collins/
Primary Examiner
Art Unit 2873

08 September 2009